



January 23, 2001

MEMORANDUM

TO: Mark Dietrich
Regional Administrator
Pocatello Regional Office

FROM: Tom Anderson, Air Quality Engineer 
Process Engineering
State Technical Services Office

THROUGH: Daniel Salgado 
Lead, Process Engineering
State Technical Services Office

SUBJECT: T2-990007, ConAgra Malting
Technical Analysis for Proposed Tier II Operating Permit No. (005-00035), Pellet Mill

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Section 404.04 (*Rules for the Control of Air Pollution in Idaho*) for Tier II Operating Permits.

PROJECT DESCRIPTION

This project is for the issuance of a Tier II Operating Permit (OP) for a pellet mill operated by ConAgra Malting located at the facility in Pocatello, Idaho.

FACILITY DESCRIPTION

ConAgra Malting operates a barley malting operation within the boundaries of the Pocatello PM₁₀ Non-attainment Area. Barley is received by truck and railcar, either stored, or prepared for the malting process. The barley is cleaned, steeped in large tanks filled with water, then sent to 1 of 6 germination beds. Germination takes about 6 days after which the barley is dried in a 2-stage drying kiln. The finished product is stored or shipped by truck or railcar. The malting process generates waste materials. These waste materials are stored in tanks, and manufactured into pellets by a pellet mill, rated at 5 tons per hour of pellets produced. The pellets are cooled, stored, and shipped by truck.

The transfers of barley during the malting process are accomplished both by gravity, and by pneumatic transfer. The emissions generated by the transfers are controlled by 3 baghouses which are manufacture guaranteed to be 99.95% efficient. This process is covered in the January 25, 1980 permit. The pellet cooler is served by a cyclone. This process is unpermitted.

SUMMARY OF EVENTS

On December 9, 1999, DEQ received a Tier II operating permit application for the pellet mill, pellet cooler, and pellet cooler cyclone. On January 20, 2000, the application was declared incomplete. On January 20, 2000, additional information was received from ConAgra Malting. On February 15, 2000, the application was declared complete. Modeling, performed by Jay Witt of DEQ, showed that the pelletizing process PM₁₀ emissions would violate the annual NAAQS emission standard without process limitations. On April 14, 2000, the Tier II application was withdrawn by ConAgra Malting. On July 11, 2000, the application was resubmitted. A public comment period was held from November 22, 2000 to December 22, 2000. Comments were received from Con Agra Malt. DEQ's response to comments are included in this package.

DISCUSSION

1. Emission Estimates

Initial attempts to permit the pellet cyclone with AP-42 emission factors showed an exceedence with the NAAQS. On April 27, 2000, ConAgra Malting conducted an emission test to obtain a more representative emission factor for the pellet mill cyclone. The test results showed that at a production rate of 2.4 tons of pellets per hour, an emission rate of 0.16 lb/hr of PM₁₀ at a flow rate of 7,330 dry standard cubic feet per minute (dscfm). At this emission rate, modeling details a concentration of 1.46 micrograms per meter for 24 hours, and an annual concentration of 0.29 micrograms per cubic meter. These concentrations are less than the significant impact levels of 5 micrograms per cubic meter for 24 hours, and 1 microgram per cubic meter on an annual basis.

The applicant requested a production limitation of 12,000 tons of pellets produced per year. With a measured emission rate of 0.16 lbs/hr of PM₁₀ from the cyclone, this equates to an annual emission rate of 0.39 tons per year. The 0.16 lbs/hr emission rate at a process weight rate of 4,800 lbs/hr is below the emission limit of 7.278 lbs/hr allowed by 58.01.01.701, Particulate Matter- New Equipment Process Weight Limitations. Because the emission rate of the process is below 1 lb/hr, 58.01.01.710, Particulate Matter- Process Equipment Emission Limitations, does not apply.

2. Modeling

Screen 3 modeling was performed by ConAgra Malting, and submitted in the application. The modeling results were reviewed, and approved by Mary Anderson, DEQ Air Quality Modeler. A copy of the modeling results are attached as Appendix A.

3. Emission Testing

ConAgra conducted a PM₁₀ reference method test to generate an emission factor for permitting purposes. A test protocol was submitted to DEQ prior to the test. DEQ staff reviewed the test report and deviations from the approved test methods were noted. Therefore, ConAgra must re-test the pellet mill cyclone using an approved test protocol, to verify cyclone emission and flow rates at the specified production rate.

4. Area Classification

ConAgra Malting in Pocatello, Idaho, is located in AQCR 61. The area is designated as nonattainment for PM₁₀ and is currently classified as a moderate, see Section 107d(1) of the CAA for additional details. The area is unclassifiable for all other federal and state criteria air pollutants (i.e., NO_x, CO, VOC, and SO_x).

5. Facility Classification

The facility is not a designated facility as defined in IDAPA 58.01.01.006.25. The facility is classified as a SM source because the potential uncontrolled emissions of any criteria pollutant is less than 100 tons per year.

6. Regulatory Review

This OP is subject to the following permitting requirements:

| | | |
|----|--------------------------------|---|
| a. | <u>IDAPA 58.01.01.401</u> | Tier II Operating Permit |
| b. | <u>IDAPA 58.01.01.403</u> | Permit Requirements for Tier II Sources |
| c. | <u>IDAPA 58.01.01.404.01.c</u> | Opportunity for Public Comment |
| d. | <u>IDAPA 58.01.01.404.04</u> | Authority to Revise or Renew Operating Permits |
| e. | <u>IDAPA 58.01.01.406</u> | Obligation to Comply |
| f. | <u>IDAPA 58.01.01.470</u> | Permit Application Fees for Tier II Permits |
| g. | <u>IDAPA 58.01.01.625</u> | Visible Emission Limitation |
| h. | <u>IDAPA 58.01.01.650</u> | General Rules for the Control of Fugitive Dust |
| i. | <u>IDAPA 58.01.01.701</u> | New Equipment Process Weight Limitations |
| j. | <u>IDAPA 58.01.01.710.02</u> | Process Equipment Emission Limitations De Minimis Exception |
| k. | <u>IDAPA 58.01.01.157</u> | Test Methods and Procedures |

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FEES

Fees do not apply to this facility in accordance with IDAPA 58.01.01.470.

RECOMMENDATIONS

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue a final Tier II OP to ConAgra Malting. A public comment period on the air quality aspects of the final OP has been provided in accordance with IDAPA 58.01.01.404.01.c, and all comments have been addressed.

TA:bm G:\AHWTANDERS\OP\TIER.2\CONAGRA\990007A.TM

cc: DEQ State Office
 Pocatello Regional Office

APPENDIX A

T2-990007 Modeling Results

07/06/00
09:23:48

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Great Western Malting Pellet Mill Cyclone

SIMPLE TERRAIN INPUTS:

| | | |
|-------------------------|---|-------------|
| SOURCE TYPE | = | POINT |
| EMISSION RATE (G/S) | = | .202000E-01 |
| STACK HEIGHT (M) | = | 29.4100 |
| STK INSIDE DIAM (M) | = | .7100 |
| STK EXIT VELOCITY (M/S) | = | 8.7376 |
| STK GAS EXIT TEMP (K) | = | 328.6000 |
| AMBIENT AIR TEMP (K) | = | 293.0000 |
| RECEPTOR HEIGHT (M) | = | 2.0000 |
| URBAN/RURAL OPTION | = | URBAN |
| BUILDING HEIGHT (M) | = | 25.3000 |
| MIN HORIZ BLDG DIM (M) | = | 36.6000 |
| MAX HORIZ BLDG DIM (M) | = | 63.1000 |

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 7330.0000 (ACFM)

BUOY. FLUX = 1.170 M**4/S**3; MOM. FLUX = 8.579 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

| DIST (M) | CONC (UG/M**3) | STAB | U10M (M/S) | USTK (M/S) | MIX HT (M) | PLUME HT (M) | SIGMA Y (M) | SIGMA Z (M) | DWASH |
|-------------|-------------------|------|---------------|---------------|---------------|-----------------|----------------|----------------|-------|
| 1. | .0000 | 0 | .0 | .0 | .0 | .00 | .00 | .00 | NA |
| 100. | 3.568 | 3 | 1.0 | 1.2 | 320.0 | 31.25 | 21.57 | 20.00 | SS |
| 200. | 2.933 | 4 | 1.0 | 1.3 | 320.0 | 32.03 | 30.79 | 27.20 | SS |
| 300. | 2.173 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 31.18 | 22.73 | SS |
| 400. | 1.954 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 40.85 | 27.87 | SS |
| 500. | 1.657 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 50.21 | 32.62 | SS |
| 600. | 1.394 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 59.27 | 37.05 | SS |
| 700. | 1.183 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 68.06 | 41.21 | SS |
| 800. | 1.015 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 76.59 | 45.13 | SS |
| 900. | .8817 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 84.89 | 48.85 | SS |
| 1000. | .7747 | 6 | 1.0 | 1.4 | 10000.0 | 33.88 | 92.97 | 52.39 | SS |

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
110. 3.641 3 1.0 1.2 320.0 31.25 23.90 22.20 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** REGULATORY (Default) ***
 PERFORMING CAVITY CALCULATIONS
 WITH ORIGINAL SCREEN CAVITY MODEL
 (BRODE, 1988)

*** CAVITY CALCULATION - 1 ***
 CONC (UG/M**3) = 2.320
 CRIT WS @10M (M/S) = 5.86
 CRIT WS @ HS (M/S) = 7.27
 DILUTION WS (M/S) = 3.64
 CAVITY HT (M) = 31.47
 CAVITY LENGTH (M) = 61.79
 ALONGWIND DIM (M) = 36.60

*** CAVITY CALCULATION - 2 ***
 CONC (UG/M**3) = .0000
 CRIT WS @10M (M/S) = 99.99
 CRIT WS @ HS (M/S) = 99.99
 DILUTION WS (M/S) = 99.99
 CAVITY HT (M) = 26.88
 CAVITY LENGTH (M) = 47.04
 ALONGWIND DIM (M) = 63.10

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

 END OF CAVITY CALCULATIONS

 *** SUMMARY OF SCREEN MODEL RESULTS ***

| CALCULATION PROCEDURE | MAX CONC (UG/M**3) | DIST TO MAX (M) | TERRAIN HT (M) |
|--------------------------|-----------------------|--------------------|---------------------------|
| SIMPLE TERRAIN | 3.641 | 110. | 0. |
| BLDG. CAVITY-1 | 2.320 | 62. | -- (DIST = CAVITY LENGTH) |
| BLDG. CAVITY-2 | .0000 | 47. | -- (DIST = CAVITY LENGTH) |

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

APPENDIX B

T2-990007 Airs Information

ABBREVIATED AIRS DATA ENTRY SHEET

Name of Facility: ConAgra Malting

AIRS/Permit #: 005-00035

Permit Issue Date: November 22,2000

*Source/Emissions Unit Name (25 spcs)
(Please use name as indicated in permit)

SCC #
(8 digit #)

Air Program
(SIP/NESHAP/
NSPS/PSD)

Pellet Mill Cooler

30200816

SIP

RETURN TO PAT RAYNE
AIRS-PT.LST (9/95)

RESPONSES TO COMMENTS AND QUESTIONS
SUBMITTED ON THE CONAGRA MALT PROPOSED TIER II OPERATING PERMIT

I. Introduction

A 30-day public comment period on ConAgra Malt proposed Tier II Operating Permit was conducted from November 22, 2000 to December 22, 2000 in accordance with IDAPA 58.01.01.364 (*Rules for the Control of Air Pollution in Idaho*). Comments were received from ConAgra Malt. This response package contains the comments received during the comment period and the Department of Environmental Quality's (DEQ) responses to those comments.

DEQ has prepared a final Tier II operating permit and technical memorandum after considering all comments received during the public comment period.

II. Responses to Comments and Questions

Comment 1: ConAgra Malt provided comments on Section 2.2 of the proposed permit. The throughput limit is listed as 2.4 tons per hour and 12,000 tons per year. We request that the short term limit be a daily limit instead of an hourly limit. The PM-10 ambient air quality standard (AAQS) is a 24 hour standard. The modeling analysis for the pellet mill demonstrated compliance with the daily AAQS using a source test emission rate that corresponded to a 2.4 ton/hr production rate as the basis for the demonstration.

DEQ Response: DEQ has changed Section 2.2 of the permit to read " The pellet mill production rate shall not exceed fifty seven and six tenths (57.6) tons per day, and twelve thousand (12,000) tons per year of pellets."

Comment 2: ConAgra Malt provided comments on Sections 3.1 of the proposed permit. ConAgra requests that the requirements of Section 3.1 of the proposed permit be changed to from hourly to daily monitoring and recording of the pellet mill production.

DEQ Response: DEQ has changed Section 3.1 of the permit to read, in part, "Each calendar day the pellet mill is operated, the permittee shall monitor and record the pellet mill production in tons of pellets produced per calendar day."

Comment 3: ConAgra Malt provided comments on attached Technical Memorandum. In the Discussion section of the Technical Memorandum, Item No. 1 notes that the plant did not exceed the PM-10 NAAQS on 5 micrograms per cubic meter for 24 hours, and 1 microgram per cubic meter per annum. These numbers are actually the significant impact levels, not the ambient air quality standards.

DEQ Response: The Technical Memorandum has been changed to reflect the fact that these are significant impact levels, not national standards.

Comment 4: ConAgra Malt provided comments on attached Technical Memorandum. Item Number three in the Discussion section of the Technical Memorandum refers to

deviations from the original test protocol. This will require an additional source test to verify emissions at the current process rate. ConAgra Malt solicited direction and input from IDEQ well in advance of the source test. The agency approved the protocol that was used during the test. However, we have since learned that due to problems during the test regarding personnel safety and test conditions, minor deviations from the original test protocol were implemented. These deviations have caused your office to require an additional test. We feel that these changes were minor in nature and could have little if any effect on the test results.

DEQ Response:

The permit has not been changed in response to this comment. The Procedures Manual for Air Pollution Control dated September 1986 states in Section I, Source Test Methods, Subsection I.1, Determination of Acceptance states: "The determination of acceptance or rejection of a test will be made by staff in the Idaho Air Quality Bureau (now called DEQ), central office. Final determination will be made after receipt of the complete test report, unless prior approval is given for waiving the full report. The Department may reject tests as invalid for (1) failure to adhere strictly to the required method; (2) incomplete written report; (3) computational or data entry errors; (4) clearly unreasonable results; or (5) failure of the source to conform to operational requirements in orders, permits, or decrees at the time of the test."

Subsection I.2 of the Procedures Manual, Observation of Tests by Department Staff states: "The Department may, at its option, have an observer present at any emissions tests conducted by a source. The observer is present to note operational and testing procedures. The observer is not present to provide guidance, approval or disapproval of alternative methods, or approval or disapproval of alternatives to conditions contained in regulations, orders, permits, or decrees, or in any way to infer that the test will meet final Department acceptance, or that the procedures carried out in his or her presence are acceptable."

Prior to testing, DEQ reviewed and approved a test protocol for the emissions test reference above. The testing was not conducted in accordance with the approved protocol, nor was prior approval to deviate from the method(s) obtained by ConAgra Malt. The testing procedures did not strictly adhere to the approved method as required by the Procedures Manual. The results cannot be used for compliance purposes, therefore, another test will be required to demonstrate compliance with emission rate limits contained in the permit.



ConAgra Malt
Americas

ConAgra Malt, Americas

Environmental Health & Safety

1701 Industrial Way

Vancouver, Washington 98660

RECEIVED

DEC 19 2000 (360) 698-6892

Fax: (360) 698-6769

IDAHO DEPT.

ENVIRONMENTAL QUALITY

December 14, 2000

Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706-1255
Attention: Gary Reinbold

RECEIVED

DEC 21 2000

DEPT. OF ENVIRONMENTAL QUALITY
TECHNICAL SERVICES OFFICE

RE: Draft Tier II Operating Permit (#005-00035)

ConAgra Malt has reviewed the draft permit and associated technical report for our Pocatello, Idaho malt facility. We have the following comments:

1. In Section 2.2 the throughput limit is listed as 2.4 tons per hour and 12,000 tons per year. We request that the short-term limit be a daily limit instead of an hourly limit. The PM-10 ambient air quality standard (AAQS) is a 24-hour standard. The modeling analysis for the pellet mill demonstrated compliance with the daily AAQS using a source test emission rate that corresponded to a 2.4 ton/hr production rate as the basis for the demonstration. The emission rate in the modeling was effectively an hourly average over a day of operation. At that rate, the modeling illustrated that concentrations were as much as 30% below impact levels. Additional calculations noted that predicted concentrations were also well below significant impact levels. Given this information and the operational limitations of the equipment, we feel that we are not contributing a significant impact on an hourly or daily basis. While we acknowledge your agency's efforts to ensure that we do not exceed a short-term limit, we feel that monitoring daily production levels will be more than sufficient to exhibit compliance with the 24-hour air quality standard.

We have contacted your agency via telephone to discuss this further. We were informed that per IDEQ policy, a permit based on an application that incorporates an hourly emission rate associated with hourly production rate must specify hourly production limits based on those rates. Further, the permittee must exhibit compliance with permitted production rate via a monitoring program. As discussed above, we do not feel that these measures are necessary. In conclusion, we propose that the throughput limit be either 57.6 tons per day or 2.4 tons per hour averaged over a day. We request a copy of the policy in question so that we can

better understand the agency's position and propose a meeting with IDEQ officials to discuss this further.

2. We ask that you change the requirements in Section 3.1 of the permit to monitor pellet production on a daily basis in order to match the timeframe for the short-term throughput limit that we requested in item No.1 above.
3. Item number one in the attached Technical Memo notes that the plant did not exceed the PM-10 NAAQS of $5 \mu\text{g}/\text{m}^3$ for 24 hours and $1 \mu\text{g}/\text{m}^3$ per annum. We think that these limits are actually significant impact levels and not ambient air quality standards. If this technical report is included as part of the permit, this wording may require revision.
4. Item number three in the attached Technical Memo refers to deviations from the original test protocol. This will require an additional source test to verify emissions at the current process rate. ConAgra Malt solicited direction and input from IDEQ well in advance of the source test. The agency approved the protocol that was used during the test. However, we have since learned that due to problems during the test regarding personnel safety and test conditions, minor deviations from the original test protocol were implemented. These deviations have caused your office to require an additional test. We feel that these changes were minor in nature and could have little if any affect to the test results.

Without major modification to the exhaust ducting from the source, the conditions that forced the deviations during the test would remain unchanged. Further, it is not clear that implementation of a new test plan with modifications will produce any change in the test results. We request that you re-evaluate the need to do an additional source test and would like to meeting with you to discuss this issue in more detail.

If you have any other questions or wish to discuss this further, please contact me at (360) 696-5692.

With best regards,



Bill Hoesman
Group Environmental Manager
ConAgra Malt Americas
bhoesman@conagramalt.com

cc: Tony Chadwick – ConAgra Malt Pocatello
Richard Elkins – IDEQ Pocatello